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Lab Laurels
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AFRL Technology inducted into Space Hall of Fame

COLORADO SPRINGS, Colo. — Air Force Research Laboratory representatives were on hand April 1 as multi-junction solar cells were inducted into the Space Technology Hall of Fame at the 20th National Space Symposium, sponsored by the U.S. Space Foundation.

Responding to the need for increased spacecraft payload power and mass budgets, AFRL sponsored research and development efforts to produce high-efficiency, multi-junction (MJ) space solar cells. Beginning in the late 1980s, AFRL efforts have boosted space MJ cell efficiency from 16 to 28 percent for triple-junction cells today.

"The AFRL solar cell research and development team acknowledged by this induction had a wonderful time working throughout the 1990s to increase cell efficiency, which is unprecedented in the history of solar cell development," said team member Dr. Kitt Reinhardt, Space Vehicles Directorate, Kirtland Air Force Base.

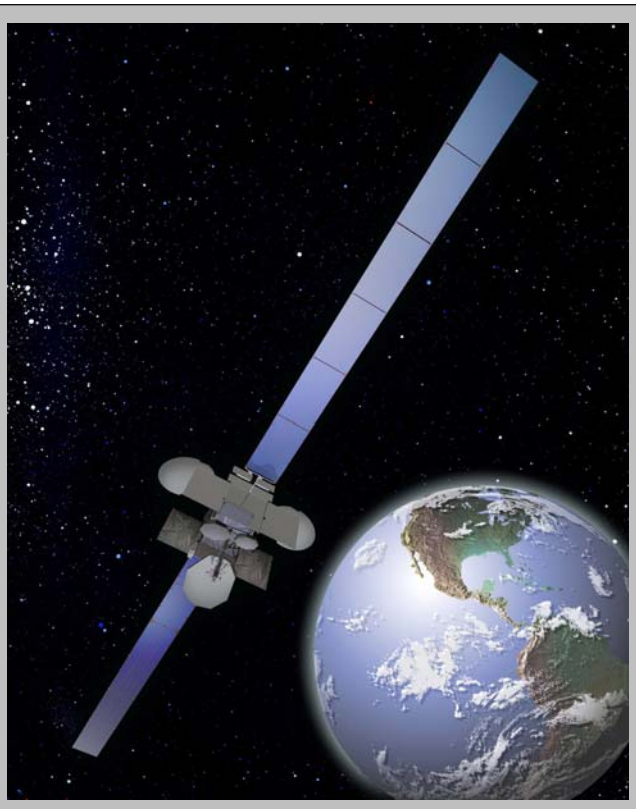
Use of MJ solar cell technology provides a direct replacement for lower efficiency single-junction cells. Thus, MJ cells enable significantly greater power to the spacecraft payload for constant solar array area, or greatly reduced solar array mass for constant solar array power output, which allows greater effective payload mass.

The end result is significantly reduced space mission lifecycle costs for the spacecraft program office.

The AFRL effort demonstrates successful implementation of the agency's research and development program, manufacturing technology (ManTech) program, and dual-use science and technology commercialization program. Boeing's Spectrolab, utilizing AFRL funding as well as its own resources for development, now produces commercially available and affordable triple-junction solar cells.

Multi-junction solar cells have been used in commercial, civil and government space programs, and are the standard for high-power communication satellites, as well as for many NASA and other missions.

Spectrolab triple junction solar cells are currently powering numerous commercial and government satellites, including Galaxy IIIC, a Boeing 702 satellite that is one of the most powerful satellites ever launches into space.



Triple junction solar cells are used to power the Boeing 702 satellite, Galaxy IIIC, pictured. AFRL research has improved the efficiency of the cells.

AFRL representatives honored at the 16th Space Technology Hall of Fame dinner in Colorado Springs, Colo. included Dr. Reinhardt, Dr. Dean Marvin, Ralph James, Clay Mayberry, David Keener and Joe Wise.

Also honored at the dinner were four associates of Boeing's Spectrolab — Bruce T. Cavicchi, James Ermer, Dr. Nasser H. Karam and Dr. Richard R. King. @